29. A method according to claim 25, wherein the second field of the non-reference frame is predicted using merely information from the second field of the reference frame.

30. A storage medium comprising a plurality of executable instructions which, when executed by a computing system, cause the computing system to implement a method according to claim 20.

31. A storage medium comprising a plurality of executable instructions which, when executed by a computing system, cause the computing system to implement a method according to claim 1.

REMARKS

This response is submitted to an Office Action received May 7, 2001 and in light of a telephone conversation with the Examiner on August 7, 2001. In this response, select claims have been amended, as represented above and specifically denoted in Appendix A. Applicant notes, however, that such amendments were not made to overcome the rejections made in the May 7th Action. Applicant does not adopt the characterization in the Action that one or more of claims 1-31 were anticipated or obvious in light of the Iu and/or Eifrig references. Rather, such amendments were made in light of telephone conversation with the Examiner in an effort to expedite allowance of one or more of the currently pending claims.

Applicant maintains the characterization of the Iu and Eifrig references introduced in previous responses. Applicant respectfully asserts that neither the Iu nor the Eifrig references, alone or in combination, teach or suggest that which is claimed in pending claims 1-31.

Accordingly, in light of the telephone conversation with the Examiner, Applicant respectfully submits that claims 1-31 are in condition for allowance and earnestly awaits notice thereof.

In an effort to expedite prosecution of this matter, the Examiner is invited to call the undersigned counsel for the Applicant to discuss any further issues preventing allowance of the currently pending claims.

Please charge any shortages and credit any overages to our Deposit Account No. 02-2666.

Respectfully submitted,
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Dated: August 7, 2001

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Appendix A: Amendments

In the Claims:

Please amend the claims as follows:

1. (Amended) A method for performing motion estimation comprising:

receiving a stream of data comprising at least a predicted frame and an anchor frame; and

utilizing even-parity field prediction to predict content of each of an [plurality of fields] even-field of the predicted frame from [corresponding fields] an odd-field of the anchor frame, and an odd-field of the predicted frame from an even field of the anchor frame.

2. The method of claim 1, wherein the content of each of the plurality of fields of the predicted frame are predicted merely from a corresponding field of the plurality of fields comprising the anchor frame, scaled by a dynamically determined motion vector.

3. The method of claim 2, wherein the motion vector is dynamically determined by measuring activity within each of the plurality of fields of the anchor frame.

4. The method of claim 1, wherein the predicted frame either precedes or supersedes the anchor frame based, at least in part, on the predicted frame type.

5. The method of claim 1, wherein each of the predicted and anchor frames contain interlaced video content or progressive video content.

6. The method of claim 5, wherein a first field of the predicted frame and the anchor frame comprises even-field content of the interlaced video content, and a second field of the predicted frame and the anchor frame comprises odd-field content of the interlaced video content.

7. The method of claim 5, wherein a first field of the predicted frame comprises even-field content of the interlaced video content and a first field of the anchor frame comprises odd-field content of the interlaced video content.

8. The method of claim 5, wherein a first field of the predicted frame comprises odd-field content of the interlaced video content and a first field of the anchor frame comprises even-field content of the interlaced video content.

9. The method of claim 1, wherein one or more motion estimation vectors are generated for each of the plurality of fields of the anchor frame by measuring a sum of absolute differences.

10. The method of claim 1, wherein even-field interlaced video content of the predicted frame is predicted from even-field interlaced video content of the anchor frame, and odd-field interlaced video content of the predicted frame is predicted from odd-field interlaced video content of the anchor frame.

11. The method of claim 10, wherein the even-field interlaced video content of the predicted frame is predicted from the even-field interlaced video content of the anchor frame and a motion vector, wherein the motion vector is determined by measuring a sum of absolute differences within the even-field interlaced video content of the anchor frame.

12. (Amended) An apparatus comprising:

a motion estimation circuit to receive a stream of data comprising at least an anchor frame and a predicted frame, and to utilize even-parity field prediction to predict content of [each of a plurality of fields] an even-field of the predicted frame from [corresponding fields] an odd-field of the anchor frame, and an odd-field of the predicted frame from an even-field of the anchor frame.

13. The apparatus of claim 12, wherein the anchor frame used either precede or supersede the predicted frame depending on predicted frame type.

14. The apparatus of claim 12, wherein the motion estimation circuit measures activity content within each of the plurality of fields of the anchor frame to generate a corresponding plurality of motion vectors.

15. The apparatus of claim 14, wherein the motion estimation circuit predicts content of a first in the predicted frame from content of a corresponding first field in the anchor frame and a first field motion vector, and predicts content of a second field in the predicted frame from a corresponding second field and a second field motion vector.

16. The apparatus of claim 12, wherein the predicted frame and anchor frame are comprised of interlaced video content, wherein a first field of each of the predicted frame and the anchor frame contain even-field interlaced video content, while a second field of each of the predicted frame and the anchor frame contain odd-field interlaced video content.

17. The apparatus of claim 12, wherein motion estimation circuit generates a motion vector for each of a first and second field of the predicted frame by measuring a sum of absolute activity differences in a corresponding first and second field of the anchor frame.

18. (Twice Amended) A storage medium comprising a plurality of executable instructions which, when executed, causes an executing processor to implement a motion estimation function to utilize even-parity field prediction to predict content of [each of a plurality of fields] an even-field of a predicted frame from [corresponding fields] an odd-field of one or more anchor frames, and an odd-field from an even-field of one or more anchor frames.

19. The storage medium of claim 18, wherein the motion estimation function generates a motion vector associated with each of the plurality of fields of the predicted frame based, at least in part, on a sum of absolute activity differences within each of the plurality of fields of the anchor frame.

20. (Amended) A method for performing motion estimation comprising:

receiving a stream of data comprising reference frames and non-reference frames; and

predicting content of [each of a plurality of] a first type of fields in non-reference frames and select reference frames using information contained in merely [corresponding] a second type of fields of a past or subsequent reference frame.

21. A method according to claim 20, wherein the reference frames include I-frame and P-frame types.

22. A method according to claim 20, wherein the non-reference frames include B-frames.

23. A method according to claim 20, wherein select reference frames include P-frames.

24. A method according to claim 20, wherein the content of each of the plurality of fields of the non-reference frame are predicted from a corresponding field of the plurality of fields comprising the reference frame, scaled by a dynamically determined motion vector.

25. A method according to claim 20, wherein a first field of the non-reference frame and the reference frame comprises even-field content, while a second field of the reference frame and the non-reference frame comprise odd-field content.

26. A method according to claim 25, wherein the first field of the non-reference frame is predicted using merely information from the first field of the reference frame.

27. A method according to claim 25, wherein the first field of the non-reference frame is predicted using merely information from the second field of the reference frame.

28. A method according to claim 25, wherein the second field of the non-reference frame is predicted using merely information from the first field of the reference frame.

29. A method according to claim 25, wherein the second field of the non-reference frame is predicted using merely information from the second field of the reference frame.

30. A storage medium comprising a plurality of executable instructions which, when executed by a computing system, cause the computing system to implement a method according to claim 20.

31. A storage medium comprising a plurality of executable instructions which, when executed by a computing system, cause the computing system to implement a method according to claim 1.